SEQUENCE LISTING

<110> Garry, Jr., Robert F.
Wilson, Russell B.

<120> METHOD OF PREVENTING VIRUS:CELL FUSION BY INHIBITING THE FUNCTION OF THE FUSION INITIATION REGION IN RNA VIRUSES HAVING CLASS I MEMBRANE FUSOGENIC ENVELOPE PROTEINS

<130> 12920.0013.00PC00

<150> US 60/517,181
<151> 2003-11-04

<160> 31

<170> PatentIn version 3.3

<210> 1
<211> 39
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 1

Leu Ile Met Lys Asn His Leu Arg Asp Ile Met Gly Ile Pro Tyr Cys
1 5 10 15

Asn Tyr Ser Arg Tyr Trp Tyr Leu Asn His Thr Ser Thr Gly Lys Thr
20 25 30

Leu Pro Arg Cys Trp Leu Ile
35

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<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 2

Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
1 5 10 15

Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys
20 25 30

Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly
35 40 45

Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe
50 55 60

Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg
65 70 75 80

Glu Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg
85 90 95

Asn Phe Phe Ser
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<210> 3
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<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 3

Leu Arg Thr Phe Ser Ile Leu Asn Arg Lys Ala Ile Asp Phe Leu Leu
1 5 10 15

Gln Arg Trp Gly Gly Thr Cys His Ile Leu Gly Pro Asp Cys Cys Ile
20 25 30

<210> 4
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<212> PRT
<213> Artificial Sequence

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<223> Synthetic peptide

<400> 4

Ile Gln Asp Leu Glu Lys Tyr Val Glu Asp Thr Lys Ile Asp Leu Trp
1 5 10 15

Ser Tyr Asn Ala Glu Leu Leu Val Ala Leu Glu Asn Gln His Thr Ile
20 25 30

Asp Leu Thr Asp Ser Glu Met Asn Lys Leu Phe
35 40

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<213> Artificial Sequence

<220>
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<400> 5

Leu Gly Leu Lys Leu Leu Arg Tyr Tyr Thr Glu Ile Leu Ser Leu Phe
1 5 10 15

Gly

<210> 6
<211> 94
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 6

Trp Tyr Thr Thr Val Pro Lys Tyr Val Ala Thr Gln Gly Tyr Leu Ile
1 5 10 15

Ser Asn Phe Asp Glu Ser Ser Cys Thr Phe Met Pro Glu Gly Thr Val
20 25 30

Cys Ser Gln Asn Ala Leu Tyr Pro Met Ser Pro Leu Leu Gln Glu Cys
35 40 45

Leu Arg Gly Ser Thr Lys Ser Cys Ala Arg Thr Leu Val Ser Gly Ser
50 55 60

Phe Gly Asn Arg Phe Ile Leu Ser Gln Gly Asn Leu Ile Ala Asn Cys
65 70 75 80

Ala Ser Ile Leu Cys Lys Cys Tyr Thr Thr Gly Thr Ile Ile
85 90

<210> 7
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 7

Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln
1 5 10 15

Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala
20 25 30

Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Glu Gln Ile Trp
35 40 45

Asn His Thr Thr Trp Met Glu Trp Asp
50 55

<210> 8
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<220>
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<400> 8

Ile Leu Asn Arg Lys Ala Ile Asp Phe
1 5

<210> 9
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<212> PRT
<213> Artificial Sequence

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<223> Synthetic peptide

<400> 9

Cys His Ile Leu Gly Pro Asp Cys
1 5

<210> 10
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<220>
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<400> 10

Phe Leu Leu Gln Arg Trp Gly Gly Thr Cys His Ile Leu Gly Pro Asp
1 5 10 15

Cys Cys Ile

<210> 11
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<400> 11

Leu Lys Leu Leu Arg Tyr Tyr Thr Glu
1 5

<210> 12
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<212> PRT
<213> Artificial Sequence

<220>
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<400> 12

Cys Thr Phe Met Pro Glu Gly Thr Val Cys
1 5 10

<210> 13
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<220>
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<400> 13

Trp Tyr Thr Thr Val Pro Lys Tyr Val Ala Thr Gln Gly Tyr Leu Ile
1 5 10 15

Ser Asn Phe

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<220>
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<400> 14

Cys Leu Arg Gly Ser Thr Lys Ser Cys
1 5

<210> 15
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<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 15

Thr Leu Val Ser Gly Ser Phe Gly Asn Arg Phe Ile Leu Ser Gln Gly
1 5 10 15

Asn Leu Ile Ala Asn Cys Ala Ser Ile Leu Cys Lys Cys Tyr Thr Thr
20 25 30

Gly Thr Ile Ile
35

<210> 16
<211> 234
<212> PRT
<213> LASSA VIRUS

<400> 16

Leu Leu Gly Thr Phe Thr Trp Thr Leu Ser Asp Ser Glu Gly Asn Glu
1 5 10 15

Thr Pro Gly Gly Tyr Cys Leu Thr Arg Trp Met Leu Ile Glu Ala Glu
20 25 30

Leu Lys Cys Phe Gly Asn Thr Ala Val Ala Lys Cys Asn Glu Lys His
35 40 45

Asp Glu Glu Phe Cys Asp Met Leu Arg Leu Phe Asp Phe Asn Lys Gln
50 55 60

Ala Ile Arg Arg Leu Lys Thr Glu Ala Gln Met Ser Ile Gln Leu Ile
65 70 75 80

Asn Lys Ala Val Asn Ala Leu Ile Asn Asp Gln Leu Ile Met Lys Asn
85 90 95

His Leu Arg Asp Ile Met Gly Ile Pro Tyr Cys Asn Tyr Ser Arg Tyr
100 105 110

Trp Tyr Leu Asn His Thr Ser Thr Gly Lys Thr Ser Leu Pro Arg Cys

```
        115                 120                 125

Trp Leu Ile Ser Asn Gly Ser Tyr Leu Asn Glu Thr Lys Phe Ser Asp
    130                 135                 140

Asp Ile Glu Gln Gln Ala Asp Asn Met Ile Thr Glu Met Leu Gln Lys
145                 150                 155                 160

Glu Tyr Ile Asp Arg Gln Gly Lys Thr Pro Leu Gly Leu Val Asp Leu
                165                 170                 175

Phe Val Phe Ser Thr Ser Phe Tyr Leu Ile Ser Ile Phe Leu His Leu
            180                 185                 190

Val Lys Ile Pro Thr His Arg His Ile Val Gly Lys Pro Cys Pro Lys
        195                 200                 205

Pro His Arg Leu Asn His Met Gly Ile Cys Ser Cys Gly Leu Tyr Lys
    210                 215                 220

Gln Pro Gly Val Pro Val Arg Trp Lys Arg
225                 230
```

<210> 17
<211> 388
<212> PRT
<213> SARS VIRUS

<400> 17

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Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe Ala Met Gln
1               5                   10                  15

Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu Tyr
            20                  25                  30

Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln
        35                  40                  45

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
    50                  55                  60

Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
65                  70                  75                  80

Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu
                85                  90                  95

Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile
            100                 105                 110

Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu Ile
        115                 120                 125

Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr Lys Met
    130                 135                 140

Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp Phe Cys Gly Lys
145                 150                 155                 160

Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly Val Val
                165                 170                 175
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```
Phe Leu His Val Thr Tyr Val Pro Ser Gln Glu Arg Asn Phe Thr Thr
            180                 185                 190

Ala Pro Ala Ile Cys His Glu Gly Lys Ala Tyr Phe Pro Arg Glu Gly
        195                 200                 205

Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg Asn Phe
    210                 215                 220

Phe Ser Pro Gln Ile Ile Thr Thr Asp Asn Thr Phe Val Ser Gly Asn
225                 230                 235                 240

Cys Asp Val Val Ile Gly Ile Ile Asn Asn Thr Val Tyr Asp Pro Leu
                245                 250                 255

Gln Pro Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys Tyr Phe Lys
            260                 265                 270

Asn His Thr Ser Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn
        275                 280                 285

Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val
    290                 295                 300

Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu Gly Lys
305                 310                 315                 320

Tyr Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val Trp Leu Gly Phe Ile
                325                 330                 335

Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile Leu Leu Cys Cys Met
            340                 345                 350

Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys Ser Cys Gly Ser Cys
        355                 360                 365

Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val Leu Lys Gly Val Lys
    370                 375                 380

Leu His Tyr Thr
385

<210>  18
<211>  175
<212>  PRT
<213>  EBOLA VIRUS

<400>  18

Glu Ala Ile Val Asn Ala Gln Pro Lys Cys Asn Pro Asn Leu His Tyr
1               5                   10                  15

Trp Thr Thr Gln Asp Glu Gly Ala Ala Ile Gly Leu Ala Trp Ile Pro
            20                  25                  30

Tyr Phe Gly Pro Ala Ala Glu Gly Ile Tyr Thr Glu Gly Leu Met His
        35                  40                  45

Asn Gln Asp Gly Leu Ile Cys Gly Leu Arg Gln Leu Ala Asn Glu Thr
    50                  55                  60

Thr Gln Ala Leu Gln Leu Phe Leu Arg Ala Thr Thr Glu Leu Arg Thr
65                  70                  75                  80
```

```
Phe Ser Ile Leu Asn Arg Lys Ala Ile Asp Phe Leu Leu Gln Arg Trp
                85                  90                  95

Gly Gly Thr Cys His Ile Leu Gly Pro Asp Cys Cys Ile Glu Pro His
            100                 105                 110

Asp Trp Thr Lys Asn Ile Thr Asp Lys Ile Asp Gln Ile Ile His Asp
        115                 120                 125

Phe Val Asp Lys Thr Leu Pro Asp Gln Gly Asp Asn Asp Asn Trp Trp
    130                 135                 140

Thr Gly Trp Arg Gln Trp Ile Pro Ala Gly Ile Gly Val Thr Gly Val
145                 150                 155                 160

Ile Ile Ala Val Ile Ala Leu Phe Cys Ile Cys Lys Phe Val Phe
                165                 170                 175
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<210> 19
<211> 191
<212> PRT
<213> INFLUENZA VIRUS

<400> 19

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Gly Leu Phe Gly Ala Ile Ala Gly Phe Ile Glu Asn Gly Trp Glu Gly
1               5                   10                  15

Met Ile Asp Gly Trp Tyr Gly Phe Arg His Gln Asn Ser Glu Gly Thr
            20                  25                  30

Gly Gln Ala Ala Asp Leu Lys Ser Thr Gln Ala Ala Ile Asp Gln Ile
        35                  40                  45

Asn Gly Lys Leu Asn Arg Val Ile Glu Lys Thr Asn Glu Lys Phe His
    50                  55                  60

Gln Ile Glu Lys Glu Phe Ser Glu Val Glu Gly Arg Ile Gln Asp Leu
65                  70                  75                  80

Glu Lys Tyr Val Glu Asp Thr Lys Ile Asp Leu Trp Ser Tyr Asn Ala
                85                  90                  95

Glu Leu Leu Val Ala Leu Glu Asn Gln His Thr Ile Asp Leu Thr Asp
            100                 105                 110

Ser Glu Met Asn Lys Leu Phe Glu Lys Thr Arg Arg Gln Leu Arg Glu
        115                 120                 125

Asn Ala Glu Glu Met Gly Asn Gly Cys Phe Lys Ile Tyr His Lys Cys
    130                 135                 140

Asp Asn Ala Cys Ile Glu Ser Ile Arg Asn Gly Thr Tyr Asp His Asp
145                 150                 155                 160

Val Tyr Arg Asp Glu Ala Leu Asn Asn Arg Phe Gln Ile Lys Gly Val
                165                 170                 175

Glu Leu Lys Ser Gly Tyr Lys Asp Trp Arg Cys Asn Ile Cys Ile
            180                 185                 190
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<210> 20

<211> 438
<212> PRT
<213> MEASLES VIRUS

<400> 20

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Phe Ala Gly Val Val Leu Ala Gly Ala Ala Leu Gly Val Ala Thr Ala
1               5                  10                  15

Ala Gln Ile Thr Ala Gly Ile Ala Leu His Gln Ser Met Leu Asn Ser
            20                  25                  30

Gln Ala Ile Asp Asn Leu Arg Ala Ser Leu Glu Thr Thr Asn Gln Ala
        35                  40                  45

Ile Glu Ala Ile Arg Gln Ala Gly Gln Glu Met Ile Leu Ala Val Gln
    50                  55                  60

Gly Val Gln Asp Tyr Ile Asn Asn Glu Leu Ile Pro Ser Met Asn Gln
65                  70                  75                  80

Leu Ser Cys Asp Leu Ile Gly Gln Lys Leu Gly Leu Lys Leu Leu Arg
                85                  90                  95

Tyr Tyr Thr Glu Ile Leu Ser Leu Phe Gly Pro Ser Leu Arg Asp Pro
            100                 105                 110

Ile Ser Ala Glu Ile Ser Ile Gln Ala Leu Ser Tyr Ala Leu Gly Gly
        115                 120                 125

Asp Ile Asn Lys Val Leu Glu Lys Leu Gly Tyr Ser Gly Gly Asp Leu
    130                 135                 140

Leu Gly Ile Leu Glu Ser Arg Gly Ile Lys Ala Arg Ile Thr His Val
145                 150                 155                 160

Asp Thr Glu Ser Tyr Phe Ile Val Leu Ser Ile Ala Tyr Pro Thr Leu
                165                 170                 175

Ser Glu Ile Lys Gly Val Ile Val His Arg Leu Glu Gly Val Ser Tyr
            180                 185                 190

Asn Ile Gly Ser Gln Glu Trp Tyr Thr Thr Val Pro Lys Tyr Val Ala
        195                 200                 205

Thr Gln Gly Tyr Leu Ile Ser Asn Phe Asp Glu Ser Ser Cys Thr Phe
    210                 215                 220

Met Pro Glu Gly Thr Val Cys Ser Gln Asn Ala Leu Tyr Pro Met Ser
225                 230                 235                 240

Pro Leu Leu Gln Glu Cys Leu Arg Gly Ser Thr Lys Ser Cys Ala Arg
                245                 250                 255

Thr Leu Val Ser Gly Ser Phe Gly Asn Arg Phe Ile Leu Ser Gln Gly
            260                 265                 270

Asn Leu Ile Ala Asn Cys Ala Ser Ile Leu Cys Lys Cys Tyr Thr Thr
        275                 280                 285

Gly Thr Ile Ile Asn Gln Asp Pro Asp Lys Ile Leu Thr Tyr Ile Ala
    290                 295                 300
```

```
Ala Asp His Cys Pro Val Val Glu Val Asn Gly Val Thr Ile Gln Val
305                 310                 315                 320

Gly Ser Arg Arg Tyr Pro Asp Ala Val Tyr Leu His Arg Ile Asp Leu
                325                 330                 335

Gly Pro Pro Ile Ser Leu Glu Arg Leu Asp Val Gly Thr Asn Leu Gly
            340                 345                 350

Asn Ala Ile Ala Lys Leu Glu Asp Ala Lys Glu Leu Leu Glu Ser Ser
        355                 360                 365

Asp Gln Ile Leu Arg Ser Met Lys Gly Leu Ser Ser Thr Ser Ile Val
    370                 375                 380

Tyr Ile Leu Ile Ala Val Cys Leu Gly Gly Leu Ile Gly Ile Pro Ala
385                 390                 395                 400

Leu Ile Cys Cys Cys Arg Gly Arg Cys Asn Lys Lys Gly Glu Gln Val
                405                 410                 415

Gly Met Ser Arg Pro Gly Leu Lys Pro Asp Leu Thr Gly Thr Ser Lys
            420                 425                 430

Ser Tyr Val Arg Ser Leu
        435
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<210> 21
<211> 199
<212> PRT
<213> HIV

<400> 21

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Ala Val Gly Ile Gly Ala Leu Phe Leu Gly Phe Leu Gly Ala Ala Gly
1               5                   10                  15

Ser Thr Met Gly Ala Ala Ser Met Thr Leu Thr Val Gln Ala Arg Gln
            20                  25                  30

Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile
        35                  40                  45

Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln
    50                  55                  60

Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln
65                  70                  75                  80

Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala
                85                  90                  95

Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Glu Gln Ile Trp
            100                 105                 110

Asn His Thr Thr Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr
        115                 120                 125

Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys
    130                 135                 140

Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp Asn
145                 150                 155                 160
```

Trp Phe Asn Ile Thr Asn Trp Leu Trp Tyr Ile Lys Leu Phe Ile Met
165 170 175

Ile Val Gly Gly Leu Val Gly Leu Arg Ile Val Phe Ala Val Leu Ser
180 185 190

Ile Val Asn Arg Val Arg Gln
195

<210> 22
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<213> Artificial sequence

<220>
<223> Synthetic peptide

<400> 22

Gly Asn His Ile Leu Ser Leu Val Gln Asn Ala Pro Tyr Gly Leu Tyr
1 5 10 15

Phe Ile His Phe Ser Trp
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<210> 23
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<213> Artificial sequence

<220>
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<400> 23

Gly Tyr Phe Val Gln Asp Asp Gly Glu Trp Lys Phe Thr Gly Ser Ser
1 5 10 15

Tyr Tyr Tyr

<210> 24
<211> 22
<212> PRT
<213> Artificial sequence

<220>
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<400> 24

Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala Pro His Gly Val Val
1 5 10 15

Phe Leu His Val Thr Tyr
20

<210> 25
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<220>
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<400> 25

Gly Val Phe Val Phe Asn Gly Thr Ser Trp Phe Ile Thr Gln Arg Asn
1 5 10 15

Phe Phe Ser

<210> 26
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<213> Artificial sequence

<220>
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<400> 26

Met Phe Pro Pro Trp Ser Ala Ala Ala Gly Val Pro Phe Ser Leu Ser
1 5 10 15

Val Gln Tyr

<210> 27
<211> 26
<212> PRT
<213> Artificial sequence

<220>
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<400> 27

Gln Asp Ala Ile Lys Lys Leu Asn Glu Ser Tyr Ile Asn Leu Lys Glu
1 5 10 15

Val Gly Thr Tyr Glu Met Tyr Val Lys Trp
20 25

<210> 28
<211> 19
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<213> Artificial sequence

<220>
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<400> 28

Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe Ser
1 5 10 15

Gln Ile Leu

<210> 29
<211> 28
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<213> Artificial sequence

<220>
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<400> 29

Ala Ala Cys Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
1 5 10 15

Gln Glu Leu Gly Lys Tyr Glu Gln Tyr Ile Lys Trp
20 25

<210> 30
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<213> Artificial sequence

<220>
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<400> 30

Asn Tyr Ser Lys Tyr Trp Tyr Leu Asn His Thr Thr Thr Gly Arg
1 5 10 15

<210> 31
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<212> PRT
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<220>
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<400> 31

Gly Thr Phe Thr Trp Thr Leu Ser Asp Ser Glu Gly Lys Asp Thr Pro
1 5 10 15

Gly Gly Tyr